A STUDY ON HEALTH EFFECTS OF LONG DURATION MOBILE PHONE CALLS

ABSTRACT

This paper focused on increasing public awareness of possible health effects from exposure to radio frequency (RF) radiation, most especially when engaging in long duration call , popularly termed 'extra – cool' in Nigeria. A survey involving design and administration of questionnaire was employed. A total of 97 questionnaires out of 100 administered to university students were returned valid. The analysis of the respondents revealed that 59.79% engaged in 'extra-cool' while 40.21% did not. The investigation of various symptoms of discomfort during 'extra-cool' activities showed that 24.74% experienced heat sensation, 14.43% headache, 10.30% dizziness, 22.68% fatigue, while 29.89% had no symptoms. However, the symptoms usually vanish within an hour and in few cases persist longer. A significant relationship was obtained between symptoms of discomfort and long call time which is a further demonstration of violation of safety rules and regulations on radiofrequency radiation use.

***Keywords**: Radiofrequency radiation, Symptoms of discomfort, Extra-cool,*

INTRODUCTION

The recent development in technology, use and growth of mobile telecommunication services in the last decade in Nigeria has increased the amount of radiofrequency radiation (RFR) exposure in our daily lives. The indiscriminate use of mobile phones has translated to great increase in worries and concerns regarding the harmful effects of mobile phones exposure on human health.

Various organizations, both governmental and non governmental, have funded research work on possible effect of exposure of RFR on health of human. The World Health Organization (WHO) established the International EMF Project in 1996 to assess the scientific evidence of possible health effects of electromagnetic frequencies in the range of 30Hz to 300 GHz [1]. Exposures to RFR emanating from mobile phones on body fluids have been reported [2, 3] to be significant. Other various researchers [4,5,6,7,8] have contributed to the determination and assessment of the level of health effects of the use RFR on the users and the public.

Despite various safety precautions and awareness on the safe use of communication devices operating on the frequency band of the global systems of mobile communication (GSM), many accidents have been inadvertently caused by mobile phones use. Apart from automobile accidents, no records of adverse effects of exposure to RFR during mobile phone use in Nigeria have been presented. This could be due to lack of awareness of the possible health effect due to RFR exposure of the user. To improve on or change this situation, facts and figure on the present level of understanding of the users of RFR and consequent effects of the use need to be obtained by further reported work on health issues and use of mobile phones; more importantly that despite more than a decade of research in this field, the potential harmful effects of mobile phone radiation still remain controversial.[9]. In this regard, this work sets out to sample opinions of users of mobile phones in Nigeria on their awareness of health implication of mobile use and evaluate what symptoms of discomfort could be attributed to mobile phone use, especially during long time calls.

Significance of the study
It is hoped that this study will help the regulatory body and the public in Nigeria to know the existence of health discomfort attributable to RFR exposure, via long time calls on mobile phones by the citizens, encouraged by the service providers.

Null hypotheses
1. Long time calls have no significant effect on the health related discomforts.
2. Brands of phone use have no significant effect on the health related discomfort experienced.

Research questions
1. What symptoms do users experienced when making long time calls?
2. Do users feel the symptoms at the start of conversation or after?
3. Do the symptoms vanish with or without medications?
4. Do the symptoms vary with types of phone?

METHODOLOGY

RESEARCH DESIGN

The descriptive research design was adopted for the purpose of this study. The questionnaire was administered to the participants and collected back by the researcher immediately after each participant has responded, with the assistance of two research assistants.

SAMPLE

The target population from which the sample of this study was drawn was undergraduate students of Ladoke Akintola University of Technology, Ogbomoso, Nigeria. Purposive sampling technique was used to select the one hundred and fifty students who engage in long time calls termed extra-cool in Nigeria. Ninety –seven (70 male and 27 female) students participated in the study. Their ages range between 14 to 30 years with a mean of 24.1years and a standard deviation of 3.6 years.

RESEARCH INSTRUMENT

The basic research instrument used in this study is a questionnaire. The reliability of the instrument was established through test-retest and it yielded 0.60, which is considered a reliable score.

DATA ANALYSIS

Data generated from the questionnaires were subjected to statistical analysis using inferential

of chi-square and descriptive statistics of parameters for further clarification for the hypothesis and the research questions . The levels of significance chosen were 0.001, 0.01 and 0.05.

RESULTS AND DISCUSSIONS

The results of the study showed fifty-nine percent (59%) of the participants engaged in long duration calls. The period of the long time calls were observed to range between 1 hour and 4 hours uninterruptedly. However, about 30% of the participants who engaged in extra-cool do that for less than 1 hour while about 10% exceed 3 hours (Fig.1).

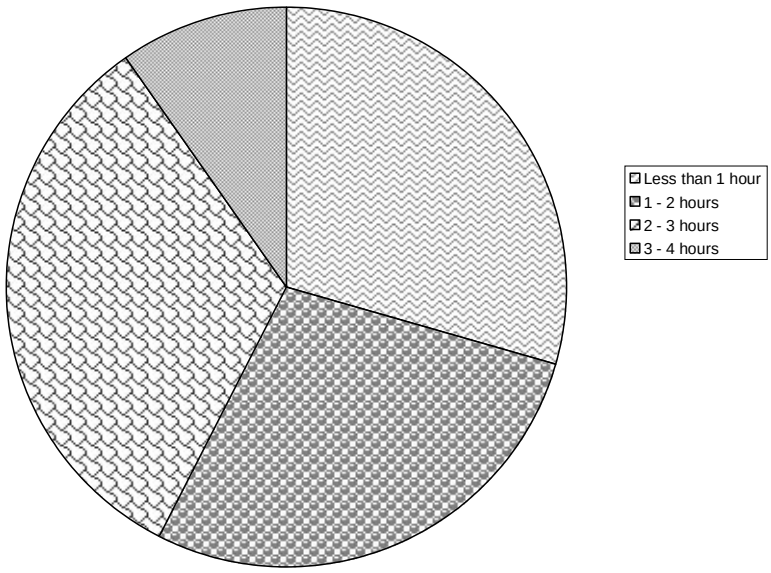

Fig. 1 : Duration of extra-cool

The statistical test of significance between long time calls and health related discomforts using chi square as a tool revealed ($\chi^2_{cal.}$ = 97.0, df = 4 , p = 0.000) the rejection of null hypothesis. This translates that at various chosen levels of significance 0.001, 0.01 and 0.05, there exists significance relationship between health related discomfort experienced by long time callers (receivers) and the duration of calls.

The health discomforts experienced were found to range from one person to another. As shown in Fig. 2, 41% of the respondents however showed no health related symptoms while making long time calls. The experienced symptoms were recorded to begin at the start of conversation by some participants (7%) of the study who experienced symptoms during long time calls while 93% of those with health discomforts during long time calls experienced the discomforts sometimes during the call.

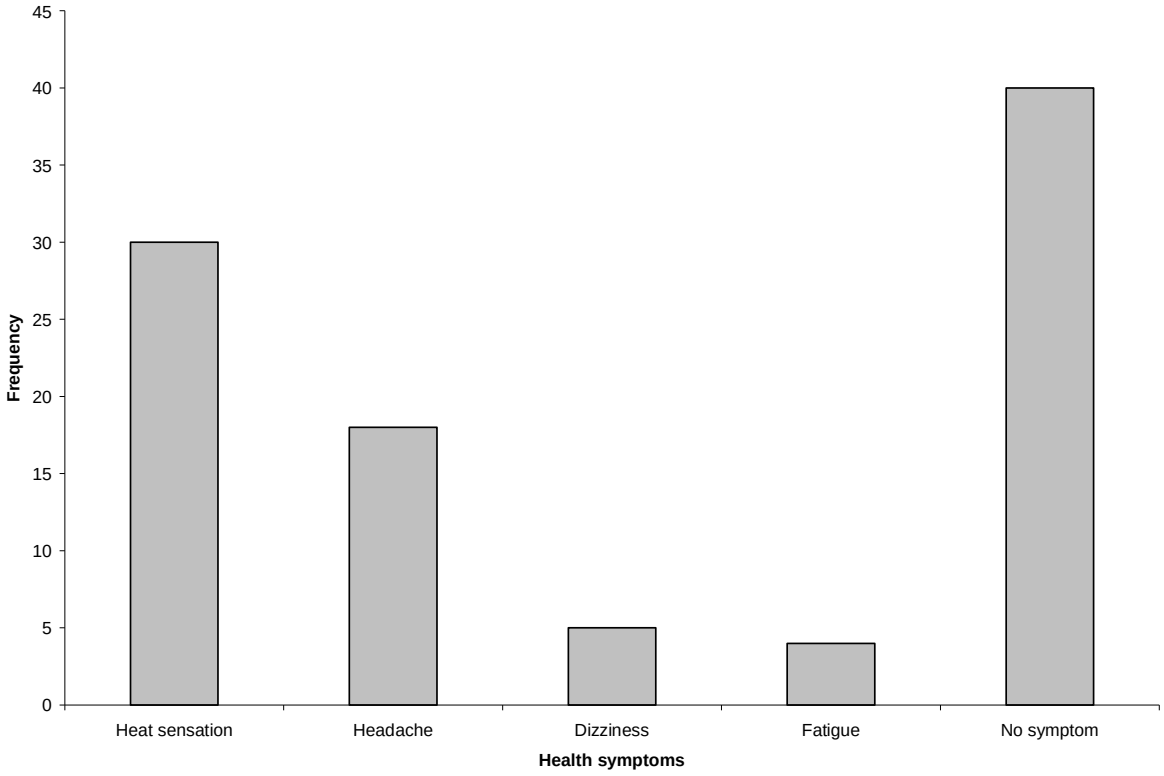

Fig. 2: Frequency of health symptoms by respondents

The symptoms experienced were found to vanish within 1 hour after call without medical consultation in 88 % of the respondents. The intervention of medical doctors was recorded by 22% of the participants of this study before the symptoms were treated. All the respondents of this study engaged in long time calls with digital mobile phones.

CONCLUSION

The study has established a significant relationship between long time calls and various health related symptoms usually felt during and after the long time calls. The health related symptoms were observed to vary in type and time of occurrence. However, medical attentions have been reported in some cases before being treated of the symptoms.

As none of the participants of the study used analogue mobile phones a, it may therefore be stated that digital mobile phones are capable of inducing health related symptoms to users who engaged in long time calls. Thus, various marketing styles by service providers, which encourage long time calls among users who are mostly youth, should be addressed by policy makers and regulatory bodies.

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